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ABSTRACT

A study was conducted to explore the concept of distance education as it pertains to elementary and secondary education in Wisconsin and to make recommendations to the Wisconsin Superintendent of Public Instruction regarding its use. Four major problem areas are identified and recommendations are provided in this report. Problems related to statewide planning include the lack of awareness of local school boards, administrators, and educators about the available range of educational technology for delivering instruction; a lack of cohesion among agency missions; and inadequate state resources. Difficulties relating to teacher certification and supervision include concerns that the required teaching license may limit the number and variety of courses offered to students, and that increased distance education may decrease supervision possible by the local district. Issues linked to administration and management include a need to improve and introduce management skills if distance programs are to succeed; an overall increase in administrative duties and responsibilities; the expansion of cooperative planning with other school districts; and oversight of teachers for evaluation purposes. Challenges posed by aspects of instruction encompass: (1) a probable need for teachers to adapt their teaching techniques in order to achieve instructional effectiveness; and (2) the question of how to maintain necessary personal contact with students. Appendixes list the 20 standards compiled as a result of the study and the contents of the statutes related to teacher certification. (SD)

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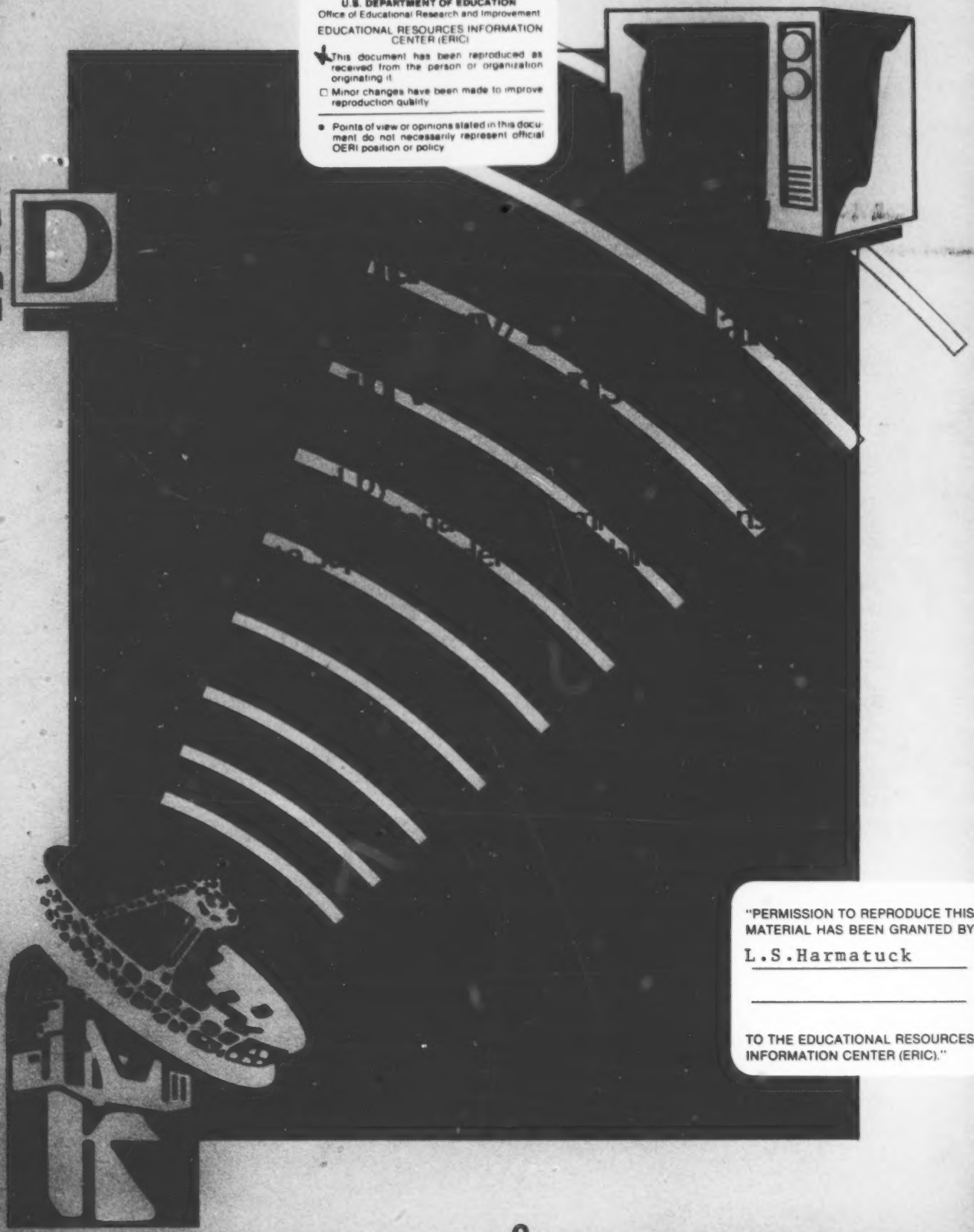

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DISTANCE EDUCATION FOR ELEMENTARY/ SECONDARY SCHOOLS IN WISCONSIN

A Report Issued by the

COUNCIL ON INSTRUCTIONAL TELECOMMUNICATIONS

to the

STATE SUPERINTENDENT OF PUBLIC INSTRUCTION

February 1989

Wisconsin Department of Public Instruction

Herbert J. Grover, State Superintendent

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TABLE OF CONTENTS

I. Charge to the Council on Instructional Telecommunications 1

II. Distance Education Background

Historical Background 5

The Standards 6

State Agencies 9

Emerging Activities 11

Conclusion 12

III. Issues and Recommendations

A. Statewide Plan 13

B. Certification and Supervision 16

C. Administration and Management 18

D. Instruction 20

IV. Compilation of Recommendations 23

Appendix A: Relevant Portions of s. 121.02 - Twenty Standards 27

Appendix B: Relevant Portions of Statutes Related to Teacher Certification 33

I. CHARGE TO THE COUNCIL ON INSTRUCTIONAL TELECOMMUMICATIONS

On November 4, 1987 Herbert J. Grover, State Superintendent of Public Instruction requested that the Council on Instructional Telecommunications (CIT) study the concept of distance learning as it pertains to elementary and secondary education in Wisconsin, and make recommendations to him regarding its use. The Council on Instructional Telecommunications consists of fifteen members appointed by the state superintendent of public instruction for four year terms. Twelve members represent each of the twelve cooperative educational service agencies and are nominated by the boards of control of those agencies. Two members are appointed to represent private and secondary educational institutions. One member represents the Regional Service Unit directors. The council advises the superintendent of public instruction and the Educational Communications Board on matters relating to instructional telecommunications for the elementary and secondary schools. The following timeline and list of activities were conveyed to the council as part of the study request.

Timeline and Activities

November 1987	Receive the charge from Dr. Grover
January 1988	Interim letter to school districts developed by DPI
January 1988	Background paper on distance learning developed by DPI staff
February 1988	Background paper reviewed by CIT for distribution to school districts
March 1988	First round of hearings on distance learning conducted by CIT
April 1988	CIT meeting to discuss hearing and identify issues to be developed into papers
April-July 1988	Development of issue papers by DPI staff
August 1988	CIT meeting to discuss and approve issue papers for distribution to school districts
October 1988	Second round of hearing on issue papers

November 1988	Compilation of hearing testimony and development of draft recommendations by DPI staff
January 1989	CIT meeting to discuss and finalize recommendations
February 1989	Presentation of recommended policy to state superintendent

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II. DISTANCE EDUCATION BACKGROUND

For the purpose of this study, the term distance education rather than distance learning has been used. The intent of this terminology is to broaden the focus from one that deals only with the learning aspect of education to one that encompasses the entire educational process which includes acquiring learning, thinking, communications, decision-making, and information and data retrieval, analysis and usage skills. Consequently, distance education is defined as: "Education conducted via communication media (teleconferences, computers, correspondence, radio, television and other technologies) with little face-to-face contact between students and the teacher of the course."

Essentially distance education is a means of extending instruction beyond the boundaries of a single classroom. By means of various technologies, instruction may stretch between school and home, between schools in a district, between districts, between secondary and post-secondary institutions, between states, and even between countries.

All indications are that the concept of distance education will be of increased interest to Wisconsin educators as they continue to look at the potential of various distance education delivery systems to expand instructional opportunities for students.

Historical Background

In the past ten years a number of Wisconsin school districts have looked to various distance education delivery systems to expand course offerings to their students. There has been a general concern for quality education and a desire on the part of many districts to retain the concept of the "comprehensive high school." Examples of the distance education delivery systems used for direct instruction of students include:

Students in a number of Coooperative Educational Service Agency (CESA) #4 (LaCrosse) schools have shared instruction in foreign language delivered by the CESA Teleconferencing Network (CTN) which is a two way interactive audio system using special teleconferencing telephone lines. Courses available on this network include German 1 and 2, Spanish 1, 2, and 3, and French 1.

Trempealeau County's Project Circuit offers the opportunity for students in eight small, rural school districts to share instruction using an interactive two way video and audio system provided by the county's cable television system. Courses made available over this system include, Spanish 1,2, and 3, German 1 and 2, French 1 and 2, Shorthand, Digital Electronics, Advanced Mathematics, and Advanced Computers.

Several suburban Milwaukee area schools provide Latin instruction for students by sharing instruction over a two-way interactive cable television link.

Four high schools are receiving live interactive instruction via satellite in Japanese and Probability and Statistics as well as participating in a science enrichment seminar as members of the pilot semester of the Satellite Educational Resources Consortium (SERC). These schools are also participating in staff development programs offered through SERC.

Due to the installation of ITFS towers (Instructional Television Fixed Service) by the Educational Communications Board, districts within a certain range are beginning to explore the opportunity to share instruction via the television signal broadcast from the tower. Combined with a telephone teleconferencing system, students can have instruction delivered by one way video and two way interactive audio.

These systems offer instructional opportunities to students that would not be available in their own school setting due to limited enrollment. By sharing teachers and instructional resources, districts can offer a course to enough students to make instruction cost effective and eliminate the need for students to commute from one school district to another to share classes.

State Standards

In recent years there has been a great deal of interest in Wisconsin in distance education as an alternative method of providing direct instruction to students and staff development opportunities to educators. The 20 Standards have focused attention on the need to provide equal access of educational opportunity to students throughout the state and the need to provide a variety of opportunities for Wisconsin educators to upgrade their skills to meet better the needs of today's students.

The Wisconsin Educational Standards, [Wisconsin Statute 121.02(1)], one-half enacted in 1973 and the other half in 1985, reinforce the concerns of educators for quality education throughout the state and fulfill a state constitutional requirement. Article X of the Wisconsin Constitution requires that the legislature create school districts "as nearly uniform as possible."

The 20 Standards focus on children, assuring that youth in Wisconsin have increased opportunities for quality education. By establishing minimum expectations for every district's total educational program, the Standards signal the clear intent of the state to ensure that opportunities will be provided to all children, regardless of where they reside. The 20 Standards are a comprehensive and integrated set of requirements intended to guarantee every Wisconsin student equal access to a quality education.

The 20 Standards are based on current educational literature and on research about effective schools. The Standards have a direct relationship to one or more of the seven key elements all schools must address if all students are to learn:

- a clear school mission and accompanying instruction program;
- strong instructional leadership;
- high pupil expectations;
- an orderly learning environment;
- ample opportunity for students to learn;
- frequent monitoring of pupil progress;
- a high degree of parent and community involvement in the schools.

Several Standards, which are cited below, relate directly to potential telecommunication activities on the part of Wisconsin school districts. These Standards are defined more fully in Appendix A.

Standard (l)

Regular Instruction. Each school board shall:

1. In the elementary grades, provide regular instruction in reading, language arts, social studies, mathematics, science, health, physical education, art and music.

2. In grades 5 to 8, provide regular instruction in language arts, social studies, mathematics, science, health, physical education, art and music. The board shall also provide pupils with an introduction to career exploration and planning.

3. In grades 9 to 12, provide access to an educational program that enables pupils each year to study English, social studies, mathematics, science, vocational education, foreign language, physical education, art and music. In this subdivision, "access" means an opportunity to study through school district course offerings, independent study, cooperative educational service agencies or cooperative arrangements between school boards and postsecondary institutions.

Standard (p)

High School Graduation. Each school board shall:

Comply with high school graduation standards under s.118.33(1). Administrative Rule PI 18.03 identifies the following course requirements as meeting this standard:

(1) Course Requirements. Beginning September 1, 1988, a board may not grant a high school diploma to any pupil unless the pupil has:

(a) Earned a minimum of 12.5 credits in grades 9 to 12 as follows:

- 4 credits of English;
- 3 credits of social studies;
- 2 credits of mathematics;
- 2 credits of science;
- 1.5 credits of physical education.

(b) Earned in grades 7 to 12 at least 0.5 credit of health education.

(2) Additional credits. In addition to the minimum course requirements outlined above the state superintendent encourages boards to require a minimum of 8.5 additional credits in vocational education, foreign languages, fine arts, and other courses.

Standard (t)

Gifted and Talented Pupils. Each school board shall:

Provide access to an appropriate program for pupils identified as gifted and talented.

Standard (b)

Staff Development. Each school board shall:

Annually, establish with school board employes a professional staff development plan designed to meet the needs of individuals or curriculum areas in each school.

Standard (m)

Education for Employment. Each school board shall:

Provide access to an education for employment program that has been approved by the state superintendent.

Standard (n)

Children at Risk. Each school board shall:

Develop a plan for children at risk under S. 118.153.

State Agencies

Several state level agencies and councils provide state leadership and/or coordination of instructional telecommunications activities, whether these activities employ distance learning or not.

The Educational Communications Board (ECB) is charged by Wisconsin statute (c. 39 s. 1) to plan and, working with the educational institutions of the state, coordinate educational radio and television for the state. The Board is composed of 16 members, including representatives of state, local and private educational institutions, the governor and four members of the legislature, and makes policy decisions for public radio and television and the use of those systems for education in Wisconsin.

A structure of Regional Service Units (RSUs) which service all areas of the state is maintained with funding from local school districts. These RSUs are located in six CESAs and assist school districts in the selection of educational programs and in the successful use of that programming in the local school districts. The RSU director is responsible for working with ECB, the DPI telecommunications consultant and local districts in accomplishing these goals.

The Department of Public Instruction (DPI) has placed primary responsibility for instructional telecommunications in its Bureau for Instructional Media and Technology (BIMT). The bureau includes an instructional telecommunications consultant who works for the effective use of telecommunications in K-12 schools. The consultant works closely with the RSU directors and maintains a close working relationship with ECB staff. During the past year the consultant has been co-director with an ECB staff member of the Rural Education Project, a federally funded project which uses telecommunications technology to improve reading instruction in rural areas of the state. Another major activity of the telecommunications consultant is working with CESAs to do needs assessment studies for their regions. A needs assessment instrument which has been developed by the consultant and the CESAs has been used in three regions and will be used in others during the coming school year to gather curriculum and hardware data.

The BIMT also has responsibility for the Council on Instructional Telecommunications. CIT members are appointed by the state superintendent and includes one member from each of the 12 CESA areas, two members representing private education and one member representing the RSU directors. These 15 council members are selected from a broad range of K-12 educators, including administrators, teachers, media directors, directors of instruction and principals. In November 1987, State Superintendent Grover charged the council with the responsibility of examining the use of distance education in K-12 schools in Wisconsin. The director of the Bureau for Instructional Media and Technology is the DPI liaison to CIT.

DPI is a member of the Satellite Educational Resource Consortium. This interstate consortium of 18 states, formed in 1988, pools the expertise and resources of state departments of education, state broadcast entities, local school districts, individual public broadcasting stations, and institutions of higher education. SERC is involved in two major initiatives. It has submitted a successful application for Star Schools Funding and is conducting a pilot semester which is delivering three direct teaching courses and several teacher inservice teleconferences and courses during the spring of 1989.

The Cooperative Education Service Agencies (CESAs) have played various roles in the telecommunications area. As already noted, they have housed the RSU directors and acted as fiscal agent for them. In the late 1960s four administrative data processing centers (ADPs) were established in CESAs 1, 5, 7 and 10. These centers were to ensure that all school districts had access to data processing services, consultation and support. The ADPs have worked primarily in the area of financial reporting for the school districts. In terms of distance education, CESAs 3, 4 and 12 operate CESA Telephone Networks (CTNs) which are used for teleconference meetings and sharing instructors. Several CESAs are experimenting with ITFS for similar purposes. As mentioned previously, three CESA areas (CESAs 8, 9 and 10) have completed telecommunication needs assessment studies. Other CESAs plan to undertake the same type of study in the near future.

The Vocational Technical and Adult Education (VTAE) colleges have been very active in the use of telecommunications for instruction. The VTAE system has a media consortium group which represents both teaching areas and technical expertise from each of the 18 districts. This consortium meets regularly to report on activities at the various campuses. The consortium is particularly active in the use of satellite delivered teleconferences. The consortium belongs to the National University Teleconference Network (NUTN), for example, which allows them to access a large number of teleconferences at a reduced rate for each site. The coordinator of this consortium informs members of teleconference opportunities and coordinates site use.

The University of Wisconsin system has perhaps the longest history of using technology to reach all parts of the state. The UW Extension developed the teleconference network ETN and the Meet Me Bridge at a time when such an idea was unique. It is looked upon as a leader in providing for outreach of the university. The ETN network is still maintained and used by the DPI as well as many other educational institutions in the state. An offshoot of this network, the CTN or CESA Teleconference Network, is at work in some areas. The Meet Me Bridge, now called WisLine, is also used by a wide variety of state agencies to facilitate conference calls. During the past year the UW System has completed a major study of its telecommunications needs. The report produced during this study will provide direction for use of telecommunications by the 29 campuses and county extension agents. The DPI telecommunications consultant was an ad hoc member of the task force that produced this report.

The Department of Administration (DOA) is designing a new telephone network for major state agencies for the transfer of data. This network will allow sharing of electronic information between the major state agencies and then will be open to contract with other state agencies. This network is going to piggy back on the existing State Telephone System (STS).

Information sharing among ECB, DPI, CESAs, RSUs, VTAEs and universities at the regional level has increased during the past year. Needs assessment studies which included these agencies have been completed in CESAs 8, 9 and 10. CESAs 11 and 12 and the Green Bay Consortium are planning similar needs assessments. As a result of these activities it has become apparent that many K-12 educators in Wisconsin are not knowledgeable about telecommunications technologies, current telecommunications projects, or human resources.

Emerging Activities

In the past several years there have been major developments in distance education concomitant with the increased interest of school districts to expand their course offerings for students. In particular, several out-of-state programs for delivering instruction via satellite are being marketed in Wisconsin. Though each has the similarity of satellite delivery, each has a different approach to the instructional setting.

A Texas firm called the TI-IN Network sends live instruction via the GTE Spacenet II satellite into the classrooms of students in a 15 state area. The classes are conducted much like conventional classes, with a teacher who uses a camera instead of a blackboard, and who controls camera movement, slides and graphics at the broadcasting studio in Webster, Texas. At the receiving end, students watch the teacher on a television set and use a cordless phone to talk to the teacher. Each remote classroom is equipped with a computer and a printer so teachers can send tests and study materials to their students. Course offerings include Computer Math 1, Computer Science, Trigonometry, Elementary Analysis, Algebra 2, Honors Calculus, Research and Technical Writing, Creative Imaginative Writing, English IV Honors, Composition, British Literature, Physics 1, Spanish 1 and 2, French 1 and 2, German 1 and 2, Latin, Psychology, Sociology, and Art History and Appreciation.

The Arts and Sciences Teleconferencing Service (ASTS) of Oklahoma State University in Stillwater, Oklahoma offers a variety of courses taught by university professors via satellite. Programming combines two or three 45 minute television programs each week with computer assisted instruction for the remaining class periods. Students at the receive site are assisted by a certified teacher who takes the course with the students and serves as a teaching partner. Course offerings include German 1 and 2, Physics, Trigonometry and Advanced Placement Calculus.

The Utah State Board of Education, International Business Machines (IBM), and Bonneville International have joined forces to use an accelerated learning methodology, a satellite dissemination system, and computer technology to provide Spanish instruction to a large number of students in remote sites. Instruction, dramatizations and cultural inserts are delivered via satellite. In the classroom sites students are led through elaboration and enrichment exercises, and computer activities by a classroom manager.

Conclusion

Distance education has a relatively long history in the state of Wisconsin, beginning with educational radio and television and continuing with the new and emerging technologies of telecommunications. Currently, several state- and regional-level agencies and councils provide state leadership and/or coordination of instructional telecommunications activities, not all of which are compatible with each other. And with the increase in use of distance education at all levels of education, the legislature, school boards and teachers unions have become active participants in the discussion over governance and allocation of scarce resources among numerous competing agencies and needs.

Section III will discuss the issues associated with this situation and present the CIT's recommendations for resolving them. The four main subsections cover the recommendations contained in the four issue papers circulated by the CIT for public review in the fall of 1988.

III. ISSUES AND RECOMMENDATIONS

A. STATEWIDE PLANNING

Wisconsin is a state in which local control of K-12 education has a strong tradition. Although the state education agency monitors those activities which are specifically required by law, including the 20 educational standards, the dominant role of the agency is one of assistance with planning, consultation and encouragement. For example, although the 20 Standards require school districts to produce curriculum plans in 12 curricular areas, the content of those plans is not dictated by the state. Guides to curriculum planning have been produced by the DPI to give districts a methodology for developing their curriculum and models for scope and sequence, but each local district produces its own specific plans.

In a similar way, state participation in distance education has been as an enabler rather than as a prescriber. Wisconsin has used state funds to develop state wide electronic highways which enable educational institutions to reach beyond their physical limitations. The best example of this is the UW Extension Teleconference Network. The ETN is maintained at the state level and links all parts of the state. This network has been and continues to be used by a wide range of educational institutions ... the state.

The development of the public broadcasting network is another example. The network is managed by the ECB but is used by local school districts when they see it as appropriate to their curriculum. Although programming is determined by the ECB, this determination involves DPI consultants, district curriculum directors, and teachers from across the state. The local school districts then select programming from the network which meets their individual needs. RSU directors facilitate rather than dictate the selective recording and use of that programming.

The current development of ITFS is taking a somewhat similar path. ECB has developed a plan for construction of ITFS facilities. ITFS licenses can be granted to any public agency filing a successful application and additional transmitters are being constructed with licenses held by VTAEs. This diversity of ownership raises the issue of control of the facility and equity of access for K-12 education. Under these circumstances it has been difficult to develop a comprehensive statewide plan that considers the needs of all educational institutions. ECB has developed a second stage plan for additional ITFS transmitters and is seeking funding for this plan. ECB is also conducting a survey of school districts to determine the need for additional ITFS transmitters.

Problems

1. Many local school boards, school administrators and educators are unaware of the range of technology for delivering instruction in a variety of ways. They need to acquire technical knowledge in order to make informed decisions.

2. Each of the state agencies and organizations previously described in the background section has its primary audience and mission. Those missions are not always compatible with each other and, therefore, cooperative planning and implementation is not always seen as consistent with their goals. Of particular concern is the relationship between DPI and ECB. Their roles and responsibilities in relationship to instructional telecommunications need to be clarified.

3. Because of differences in regional resources, programming needs and attitudes toward distance education, it is difficult to develop a statewide plan, at least insofar as type of usage is concerned.

4. These same differences make it impossible for regions of the state, left entirely to their own resources, to have equal access to distance education opportunities.

5. Available state level resources are not adequate to build a comprehensive distance education network. Until need is established and documented and a plan that meets these needs in an equitable manner has been written, it will be difficult to obtain increased state funds.

6. Private companies which market distance learning to school districts have a profit goal. In order to realize this profit, they need to maximize the appeal of their courses to as broad an audience as possible; in this case, a national audience. A national instruction system will find it difficult to deliver instruction which is tailored to the needs of a particular district, region or state.

Recommendations

1. The ECB should develop a plan for a comprehensive, statewide, interactive telecommunications delivery system to assure equal access to distance education for all Wisconsin students and educational institutions. The delivery system must reach all school districts of the state. A combination of technologies (e.g., ITFS, satellite, telephone, cable television and fiber optics) is necessary to accomplish this equity of access. This plan must be developed with broad input from the K-12 schools and the university and VTAE systems, and be endorsed by these groups. This plan should contain at least the following:

    - an assessment of all telecommunications delivery systems currently being used by K-12 school districts in the state including cable television, private and public satellite downlinks, ITFS, microwave, fiber optics, telephone teleconferencing networks, and the state telephone system;

- a master plan for (1) linking all existing telecommunications delivery systems into a statewide distance education network that is transparent to the school districts regardless of the particular technology they currently use or is available to them, and (2) expanding this network to reach all school districts not using one of the technologies at the time of the assessment. This master plan should include:
  —a management plan detailing how the ECB will operate and maintain this statewide telecommunications delivery network;
  —a detailed budget statement for creating this statewide network, maintaining it once it is in operation, and expanding it to include all school districts and to take advantage of new or emerging technologies;

- a system of governance that ensures fair and equal access to the telecommunications delivery system by all school districts in the state.

Sufficient financial support should be provided by the state to complete the system. The ECB should then be responsible for its implementation.

2. The DPI should be responsible for educational needs assessment and instructional content and evaluation of statewide telecommunications programs intended for elementary and secondary schools in Wisconsin. This responsibility is exercised in cooperation with the ECB, universities, VTAE colleges, CESAs, RSUs and other instructional providers.

3. The DPI should initiate a budget request to fund planning, development, and demonstration grants for the use of telecommunications by school district and/or CESA consortia. Priority should be given to grants which will complete a statewide instructional telecommunication needs assessment for K-12 schools.

4. The DPI should provide leadership through its telecommunications consultant by providing information regarding all distance education options, assistance with completion of needs assessment and implemenation at the CESA level, and, where appropriate, at the district level. This consultant, working closely with the ECB, will be responsibile for coordinating information about distance education for K-12 schools of Wisconsin. This information will include services provided by the UW System, VTAEs, CESAs, and RSUs.

5. In accordance with Recommendation 1, the state should fund a telecommunications delivery system accessible to all school districts of Wisconsin. Local and/or consortium funds should continue to provide the major share of funding required for last mile delivery and use of the telecommunications delivery systems for distance education.

6. The CIT should cooperate with the CESAs and RSUs to sponsor conferences on telecommunications technology for instruction on a regular basis. This will help

address the need for K-12 educators to have greater knowledge of the alternatives and the technology.

B. CERTIFICATION AND SUPERVISION

Wisconsin has traditionally recognized the importance of teacher certification to assure that persons who teach in Wisconsin have both subject area expertise and an understanding of learning theory and child and adolescent psychology. Wisconsin has also placed responsibility on the local school board for supervision of teachers employed by the district.

State statutes and administrative rules require a Wisconsin teaching license. The statutes related to licensing are:

118.19(1):	licensing mandate;
118.21(1 and 2):	teacher contract invalid without license;
121.006(2)(b):	reports required to receive state aid;
121.02(1)(a):	Standard (a), requiring all staff to be licensed.

The statutes and administrative rules are also clear about the need for administrative staff to supervise all teachers and for the districts to develop professional development programs affecting all teaching staff. The relevant statutes and administrative rules are:

121.02(1)(b) and PI 8.01(2)(b):	staff development;
121.02(1)(q) and PI 8.01(2)(q):	job descriptions and performance evaluation.

The statutes include provisions for instruction by other than DPI licensed teachers where access to instruction is not readily available. Examples are flight instruction and exceptional educational needs. However, none of the provisions appear to be applicable to distance education. The statutes in question are:

118.15(1)(d):	compulsory attendance, private school option;
118.15(1)(b) and (2):	Vocational school option;
120.12(17):	contracting with UW System;
120.21(1)(a):	contracting with UW Extension;
115.83(1)(a):	contracting for physical or occupational therapy;
115.85(2)(d):	private educational service for EEN children;
118.15(1)(d)4:	compulsory attendance, private school option;
118.153(3)(c):	private agency for Milwaukee Children at Risk Program;
120.13(26):	contracting for concurrent education and treatment;
120.21(1)(b):	contracting with flight operator schools.

In addition to the statutes, there is an Attorney General's Opinion which is relevant to the question of contracting with private agencies for instruction in public schools. The Attorney General has found (OAG 7-87, March 9, 1987) that school districts do not have authority to contract with private driver training schools to provide driver education programs.

Problems

1. While Wisconsin law requires a Wisconsin license for elementary and secondary teaching and mandates supervision and control of both curriculum and professional staff with very few exceptions, requiring the Wisconsin license may limit the number and variety of courses available to students in some school districts. For example, small districts find it costly to hire teachers with licenses in subject areas in which very few students enroll, and larger districts have difficulty finding licensed teachers available in some specialized fields.

2. The use of distance education to provide instruction limits the supervision possible by the local district. While it is important to provide access to the broadest possible range of instruction, quality control is essential and the school district is still responsible for the instructional process. Providing access to a broad range of course offerings must be balanced against the traditional and legal methods which Wisconsin uses to insure instructional quality.

3. If a school district provides instruction to its students given by a Wisconsin certified teacher via telecommunications, the question of on site supervision, facilitation, and student support remains. The skill of a teacher trained to provide these services is based, not only on subject knowledge, but also on an understanding of child or adolescent psychology and development. Just as it is costly to provide a subject-certified teacher for small numbers of students, it is also costly to assign a certified teacher, although not necessarily certified in the subject, to a small group of students.

Recommendations

1. To ensure the quality of teachers instructing the students of this state, a Wisconsin license in the discipline to be taught should continue to be required of instructors of satellite and other distance learning systems for Wisconsin schools to use these courses as part of their curriculum. Where a distance teacher does not qualify for certification, all certification rules and regulations for temporary licensure that apply to in-state teachers will apply to distance teachers.

2. A Wisconsin licensed teacher employed by the school district receiving the distance education course must be assigned by the district as the teacher of record for each distance education course and must provide instructional guidance for the students in the course. This teacher may or may not be directly responsible for assisting the students with course content, but is responsible for ensuring the

smooth operation of the distance education classroom, supervising the learning activities outside of the regularily scheduled distance programming, and keeping all records associated with this course including grading, transcripts, and progress reports. This teacher is also responsible for ensuring that students have adequate instructional support relevant to the distance education course they are taking.

3. Classroom supervision for students in distance education courses must be provided. Qualifications of the classroom supervisor shall be determined by the school board.

4. Current school district practices and procedures for evaluating traditional classroom instruction should be used to evaluate the distance education course or program. This evaluation should be used in the decision to continue or discontinue use of the distance course or program.

C. ADMINISTRATION AND MANAGEMENT

Several successful projects have been implemented in the state such as Project Circuit, a two way video and audio cable television network serving nine school districts in Trempealeau and Jackson counties; and CTN 4, a two way audio teleconferencing network in CESA 4 which provides 27 school districts with the opportunity to participate in audio conferencing and in two way interactive audio instruction for students.

Most successful distance education programs at the K-12 level involve cooperation among schools, school districts, regional educational agencies and/or state education agencies. Careful planning, well-organized management, and effective program and student support are necessary for the success of distance education projects.

Because of the very nature of distance education systems, a variety of administrative and management issues arise which need to be addressed when distance education is used as a delivery system for direct instruction of students.

Problems

1. The more a distance education program differs from the normal schedules, events, and procedures in a school district, school, or classroom, the more new management skills will be required for programs to succeed.

2. The aspects of administration and management which most often require attention include establishing lines of responsibility, obtaining and handling funds, cooperative planning with other districts and agencies, obtaining, managing and repairing equipment, record keeping and reporting, concerns

about supervision of students, scheduling classes, scheduling existing staff, recruiting new staff, managing program change and updating program content, managing contracts and financial agreements, and dealing with new entities in the community.

3. The scheduling of classes may now include discussions and negotiations with other districts to try and coordinate annual calendars and class schedules.

4. Cooperative decisions will have to be made on who will determine the curriculum or the courses being offered to students in several school districts and who will have the authority to alter the curriculum. The curriculum content will also have to be evaluated by the cooperating districts to determine if it is congruent with curriculum policy and planning within each district, as required by Standard (k).

5. Personnel evaluation remains the responsibility of the school board. In cooperative ventures, decisions will also have to be made on who will be responsible for the evaluation and supervision of the teacher.

6. Traditional methods of ascertaining cost effectiveness of an educational program may not be applicable to distance learning programs. Costs in distance education are generally a function of the amount and type of content to be presented, the size and location of the audience, the choice of media, and the sophistication of the product. Typically costs over and above traditional instructional delivery costs will include capital costs (hardware, actual equipment or facilities), developmental costs (putting systems into motion and getting the first presentation ready), operating or maintenance costs (keeping systems running smoothly), and expansion costs.

<u>Recommendations</u>

1. The DPI in cooperation with the ECB should develop a resource and planning guide for distance education which provides guidelines for districts, CESAs, and distance education consortiums. This guide should provide information relating to various telecommunication delivery systems (and combinations of systems) and the way they may best be used in the K-12 educational environment.

2. Districts using distance education for direct instruction of students should be required by administrative rule relating to Standard (b) staff development, Standard (q) staff evaluation, and Standard (s) testing to have a board approved distance learning policy which defines how the district will address the following issues:

   - mechanisms for resolving scheduling and common calendar conflicts within a consortium;

- staff development for teachers and supervisors responsible for receiving and managing distance education courses and, when possible, for those delivering distance education courses;
- teacher evaluation and supervision;
- curriculum integration/congruence with district policies;
- student supervision and support.

3. The school board shall as part of its compliance with Standard (k) have on file the curriculum for all distance education classes used in the district.

4. The DPI Telecommunications Consultant will provide assistance to school districts, district and/or CESA consortia, CESAs and RSUs on the effective implementation of distance education.

D. INSTRUCTION

Successful distance education programs are based on current educational theory and practice. The instructional design of the program must address the students' time on task, frequent monitoring of student progress, school climate, good student and teacher interaction, strong leadership on the part of administration, clear goals and a clear mission, high pupil expectations, and quality school/community relationships.

Successful distance education programs can be large and reach many students, or small and reach only a few students. Each has its own variations and differences, its own special characteristics and flavor, its own technological applications to deliver and present content. These programs usually began both in Wisconsin and in other states because of an identified need; a need such as a course which must be offered, a change in state requirements, or a desire to expand the educational opportunities of students beyond the boundaries of the school.

Careful curriculum planning, including the integration of a number of specific areas (e.g., computer education, library media skills, environmental education) into the subject area curriculums, is also required, necessitating close control of the content of courses. The statute and administrative rule in question are Standard (k) and PI 8.01(2)(k)2.

The programs may be complete courses, supplements to standard courses, or enrichment activities. Many current K-12 programs are designed to provide elective and enrichment courses or experiences, thus supplementing the core curriculum.

Effective distance education programs cannot be dependent only on the technology used for delivery. Methods of meeting the social and emotional needs of the learners must be built into the programs. This includes devising methods for receiving feed-

back, help, and a sense of belonging to a classroom. Learners who are independent, self-starting, and self-motivated help make a distance education program a success. A good program takes advantage of the students' desires to learn by using a variety of techniques to enhance motivation and sustain student interest.

Problems

There are a number of instructional concerns which need to be addressed when distance education is used as a delivery system for direct instruction of students. Paramount is the concern of instructional quality and instructional effectiveness.

1. In the traditional, as well as the distance learning environment, instructional quality and effectiveness is dependent on the expertise of a good teacher. However, in many types of distance education, teachers will need to adapt their teaching techniques, use new equipment and technologies, and relate to learners in different ways in order to assure quality instruction. These teachers will need to be prepared to deal with any combination of the following:

   - teaching lesson plans partly or completely developed by others;
   - preparing very detailed lessons well in advance of delivery;
   - teaching without a group of responsive students in attendance;
   - teaching with new types of feedback (or, perhaps with no feedback at all) from learners;
   - organizing and structuring materials in new ways;
   - systematically pre-testing materials and explanations for appropriateness, clarity and comprehensibility;
   - pacing and delivering lessons in a different manner;
   - presenting lessons according to strict and inflexible time schedules;
   - balancing multiple materials and inputs to students;
   - planning differently for the provision of social and emotional needs of student groups;
   - projecting style and personality in new ways.

2. Most students need support of various kinds as they begin and proceed through distance education experiences. A distance teacher who is removed from the learner cannot provide the usual methods for guidance and support found in the traditional classroom. The personal interest, friendly direction, timely approval, encouraging comment, leading question, and concerned intervention often required to keep students on task are difficult without face-to-face contact. Alternatives to traditional instructional guidance need to be developed. When support is provided over distance, both frequent contact and a short turnaround time for all communication are crucial for success.

Recommendations

1. The resource and planning guide to be developed by the DPI in cooperation with the ECB should provide assistance and recommendations on how to design, implement, and evaluate student programs which are based on current research on effective schools.

2. The school board distance education policy should define the following in relationship to direct instruction of students via distance education systems:

   - acceptable student/teacher ratios for various types of distance education;
   - student supervision for various types of distance education;
   - student support including laboratory facilities, library media resources, and teacher/student interaction;
   - principles for selecting technology appropriate to course content.

3. The DPI Telecommunications Consultant will provide assistance to school districts, district and/or CESA consortia, CESAs and RSUs on the design and implementation of distance education programs.

4. The DPI should work with the UW-System, UW-Extension, CESAs, VTAEs and other staff development providers to develop a series of program offerings for teachers who will be teaching over a distance.

IV. COMPILATION OF RECOMMENDATIONS

A. STATEWIDE PLANNING

1. The ECB should develop a plan for a comprehensive, statewide, interactive telecommunications delivery system to assure equal access to distance education for all Wisconsin students and educational institutions. The delivery system must reach all school districts of the state. A combination of technologies (e.g., ITFS, satellite, telephone, cable television, and fiber optics) is necessary to accomplish this equity of access. This plan must be developed with broad input from the K-12 schools and the university and VTAE systems, and be endorsed by these groups. This plan should contain at least the following:

   - an assessment of all telecommunications delivery systems currently being used by K-12 school districts in the state including cable television, private and public satellite downlinks, ITFS, microwave, fiber optics, telephone teleconferencing networks, and the state telephone system;
   - a master plan for (1) linking all existing telecommunications delivery systems into a statewide distance education network that is transparent to the school districts regardless of the particular technology they currently use or is available to them, and (2) expanding this network to reach all school districts not using one of the technologies at the time of the assessment. This master plan should include:
     — a management plan detailing how the ECB will operate and maintain this statewide telecommunications delivery network;
     — a detailed budget statement for creating this statewide network, maintaining it once it is in operation, and expanding it to include all school districts and to take advantage of new or emerging technologies;

   - a system of governance that ensures fair and equal access to the telecommunications delivery system by all school districts in the state.

   Sufficient financial support should be provided by the state to complete the system. The ECB should then be responsible for its implementation.

2. The DPI should be responsible for educational needs assessment and instructional content and evaluation of statewide telecommunications programs intended for elementary and secondary schools in Wisconsin. This responsibility is exercised in cooperation with the ECB, universities, VTAE colleges, CESAs, RSUs and other instructional providers.

3. The DPI should initiate a budget request to fund planning, development, and demonstration grants for the use of telecommunications by schoool district and/or

CESA consortia. Priority should be given to grants which will complete a statewide instructional telecommunication needs assessment for K-12 schools.

4. The DPI should provide leadership through its telecommunications consultant by providing information regarding all distance education options, assistance with completion of needs assessment and implemenation at the CESA level, and, where appropriate, at the district level. This consultant, working closely with the ECB, will be responsibile for coordinating information about distance education for K-12 schools of Wisconsin. This information will include services provided by the UW System, VTAEs, CESAs, and RSUs.

5. In accordance with Recommendation 1, the state should fund a telecommunications delivery system accessible to all school districts of Wisconsin. Local and/or consortium funds should continue to provide the major share of funding required for last mile delivery and use of the telecommunications delivery systems for distance education.

6. The CIT should cooperate with the CESAs and RSUs to sponsor conferences on telecommunications technology for instruction on a regular basis. This will help address the need for K-12 educators to have greater knowledge of the alternatives and the technology.

B. CERTIFICATION AND SUPERVISION

1. To ensure the quality of teachers instructing the students of this state, a Wisconsin license in the discipline to be taught should continue to be required of instructors of satellite and other distance learning systems for Wisconsin schools to use these courses as part of their curriculum. Where a distance teacher does not qualify for certification, all certification rules and regulations for temporary licensure that apply to in-state teachers will apply to distance teachers.

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APPENDIX A - TWENTY STANDARDS

Standard (l): Regular Instruction

Each school board shall:

1. In the elementary grades, provide regular instruction in reading, language arts, social studies, mathematics, science, health, physical education, art and music.

   In this subdivision, "regular instruction" means instruction each week for the entire school term in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed and adopted under par. (k).

2. In grades 5 to 8, provide regular instruction in langauge arts, social studies, mathematics, science, health, physical education, art and music. The board shall also provide pupils with an introduction to career exploration and planning.

   In this subdivision the definition of "regular instruction" may be changed to allow for middle level formats which offer or require a variety of exploratory experiences for pupils, in areas such as foreign language, business education, vocational agriculture, technology education, home economics education and marketing education.

3. In grades 9 to 12, provide access to an educational program that enables pupils each year to study English, social studies, mathematics, science, vocational education, foreign language, physical education, art and music.

   In this subdivision, "access" means an opportunity to study through school district course offerings, independent study, cooperative educational service agencies or cooperative arrangements between school boards and post-secondary institutions without charge for tuition. The school board shall make all courses as widely available to all pupils as possible, however an individual pupil's scheduling conflict does not constitute denial of access to a course.

Standard (p): High School Graduation Standards

Each school board shall:

Comply with high school graduation standards under s.118.33(1).

PI 18.03

(1) Course Requirements. Beginning September 1, 1988, a board may not grant a high school diploma to any pupil unless the pupil has:

(a) Earned a minimum of 12.5 credits in grades 9 to 12 as follows:

1. 4 credits of English which incorporate instruction in written communication, oral communication, grammar and usage of the English language, and literature.

2. 3 credits of social studies which incorporate instruction in state and local government.

3. 2 credits of mathematics which incorporate instruction in the properties, processes, and symbols of arithmetic and elements of algebra, geometry, and statistics.

4. 2 credits of science which incorporate instruction in the biological sciences and physical sciences.

5. 1.5 credits of physical education which incorporate instruction in the effects of exercise on the human body, health-related physical fitness, and activities for lifetime use.

(b) Earned, in grades 7 to 12 at least 0.5 credit of health education which incorprates instruction in personal, family, community, and environmental health.

(2) Additional credits. In addition to the minimum course requirements outlined above the state superintendent encourages boards to require a minimum of 8.5 additional credits in vocational education, foreign languages, fine arts, and other courses.

Standard (t): Gifted and Talented Pupils

Each school board shall:

Provide access to an appropriate program for pupils identified as gifted and talented.

This standard requires school districts to assure that the special needs of gifted and talented students are understood and accommodated in all Wisconsin public schools from kindergarten through grade 12. The standard is consistent with the philosophy of Wisconsin school districts that children are entitled to an education commensurate with their abilities and interests.

Research continues to show that, as a group, gifted and talented children are the most underserved pupils in the public schools. Too often, these pupils are

ignored, restricted, or underachieving and, if not part of the typical dropout statistics, have become in-school dropouts.

The intent of the standard is to cause schools to develop the means by which gifted/talented pupils will be identified and, once identified, provided access to a set of systematic and continuous instructional activities which are appropriate to the developmental needs of those children and youth identified.

Standard (b): Staff Development

Each school board shall:

Annually, establish with school board employees a professional staff development plan designed to meet the needs of individuals or curriculum areas in each school.

The preparation of school personnel is a continuous process beginning with a pre-service program and extending throughout the professional's career. Shifts in the public's expectations for schools have been dramatic over the past decades. New knowledge and understandings, new generations, and new expectations all make continuing education of professional staff an essential component of overall teacher education.

Recognizing the importance of inservice education for school board employees, the DPI no longer issues lifetime licenses. DPI requires all employees to renew their licenses on a periodic basis. License renewal requires completion of continuing education courses in the form of six semester credits at an accreditied college or university or the equivalent of 180 clock hours of preapproved professional activities every five years.

School districts must be staffed by effective licensed school employees in order to provide all students with a sound educational program. School personnel can remain effective only if they engage in ongoing professional staff development activities which meet their needs, the needs of students, and the needs of the instructional programs.

The intent of the standard is to ensure opportunities for licensed school board employees to increase the knowledge and skills necessary for their competent performance in the school(s) of their employment.

Standard (m): Education for Employment

Each school board shall:

Provide access to an education for employment program that has been approved by the state superintendent.

PI 26.03

(4) All pupils in grades kindergarten through 12 shall have access to an education for employment program which provides for the following:

(a) Instruction which provides for the practical application of basic skills in the general and vocational curricula.

(b) School-supervised work experience. Work experience may include community field experiences relating to work in grades kindergarten through grade 12, more specific occupational training in grades 7 through 12, and paid work experience in grades 10 through 12.

(c) Career exploration and planning which also addresses sex-role stereotyping in career decision making.

(d) Instruction in employability skills and attitudes.

(e) The study of the practical application of economics and American economic institutions, including entrepreneurship education and the knowledge needed to begin to operate a business.

Standard (n): Children at Risk

Each school board shall:

Develop a plan for children at risk under s. 118.153.

PI 25.03(b)

The plan shall describe how the needs of children at risk will be met through each of the following:

1. Curriculum modifications and alternative programs suited to the pupils' learning needs and which enable elementary school pupils to advance in grade level and enable high school pupils to earn academic credit leading to a high school diploma under s. 118.33, Stats. This shall include a description of any curriculum modifications and alternative programs provided under s. 118.15(1)(b) and (d), Stats., and, for districts operating under ch. 119, Stats.,

those curriculum modifications and alternative programs provided under s. 118.153(3)(c), Stats.

2. Remedial instruction provided to pupils in reading and mathematics skills areas in which it is determined that the pupils are one or more years behind their peers.

3. Parental involvement, including participation in program planning and training for parents to assist them in fostering the school attendance and school achievement of their children.

4. Pupil support services, including school counseling, school social work, school nursing, and school psychological services.

5. Identification and use of community support service providers, including:

   (a) Community programs and services provided by educational, social, health, business, industry and other public, private and volunteer organizations.
   (b) State, county and local government agencies.

6. Programs and instruction which will contribute to the preparation of pupils for work, including career exploration and planning, employability skills and attitudes, and development of specific occupational skills.

7. Other approaches and services which have demonstrated success in meeting the needs of children at risk, provided that programs for pupils in grades 9 through 12 are designed to allow pupils to meet the high school graduation requirements under s.118.33, Stats., and PI 18.

APPENDIX B

CONTENTS OF THE STATUTES RELATED TO TEACHER CERTIFICATION

118.19(1) requires that "any person seeking to teach in a public school...shall first procure a certificate or license from the department."

118.21(1) requires contracts between the school district and teachers to be on file with the school district clerk, and automatically voids a teaching contract "with any person not legally authorized to teach the named subject . . .." "All teaching contracts shall terminate if, and when, the authority to teach terminates."

118.21(2) requires teaching licenses to be on file with the school district and prohibits payment of a salary to teachers not meeting the requirement.

121.006(2)(b) permits the withholding of state aid from districts that do not "employ teachers qualified under 118.19" or that do not "file all reports as required by state law."

121.02(1)(a) requires that "Every teacher, supervisor, administrator, and professional staff member shall hold a certificate, license or permit to teach issued by the department..."

121.02(1)(b) and PI 8.01(2)(b) require an annual "staff plan designed to meet the needs of individuals or curriculum areas in each school."

121.02(1)(q) and PI 8.01(2)(q) require "specific criteria and a systematic procedure to measure the performance of licensed school personnel."

121.02(1)(k) and PI 8.01(2)(k) require development, adoption, and implementation of written school district curriculum plans which specify objectives, course sequence, content, time allocation, evaluation method, and integration of computer literacy and environmental education objectives.

118.15(1)(d), the compulsory attendance law, allows the parent or guardian to "request the school board to provide the child with program or curriculum modifications, including . . . a work study program, . . . alternative public school, . . . private school, . . . homebound study, including nonsectarian correspondence courses or other courses of study approved by the school board, . . . a public educational program outside the district . . .."

118.15(1)(b) and (2), allows a child to "attend, in lieu of high school or on a part time basis, avocational, technical, and adult education school" if approved by the school board and if the VTAE district has established appropriate vocational and technical courses.

120.12(17) requires the school board to pay tuition for students to take a course taught by the University of Wisconsin System.

120.21(1)(a) allows a school board to contract "with the University Extension Division of the UW for extension courses for pupils enrolled in high school."

115.83(1)(a), in authorizing special education programs and services, allows the school board to "contract with private or public agencies for physical or occupational therapy services on the basis of demonstrated need . . . subject to approval by the division for handicapped children and pupil services."

115.85(2)(d), in requiring appropriate special education programs of school districts, allows the school district to place children with exceptional educational needs in a private special education service upon approval of the state superintendent.

118.15(1)(d)4, the compulsory attendance statute, allows the school district, at the request of a parent or guardian, to enroll the child in a nonsectarian private school or program in the school district.

118.15(3)(c) allows Milwaukee Public Schools to use private, nonprofit, nonsectarian agencies as part of their children at risk programs.

120.13(26), in listing the powers of school boards, authorizes them to "contract with private education services for pupils who need concurrent education and treatment services, the educational portion of which is not available in the schools in which the pupils are enrolled . . .." upon approval of the state superintendent.

120.21(1)(b) allows school boards "to contract with flight operator schools, approved by the U. S. civil aeronautics administration, for courses in flight instruction approved by the state superintendent."